

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A process for producing powder, flakes, or pellets containing α -sulfo fatty acid alkylester salt in high concentrations, said process comprising:

(1) a step of preparing a paste containing α -sulfo fatty acid alkylester salt by a series of reactions of sulfonating a fatty acid alkylester with a sulfonating gas by contact with each other, esterifying the sulfonated product with a lower alcohol, neutralizing the esterified product, and bleaching the neutralized product, to give a paste containing α -sulfo fatty acid alkylester salt;

(2) a step of conducting a first aging of the thus obtained paste, wherein the first aging temperature is 60-90°C and the first aging time is 1-48 hours;

(3) a step of making the aged paste into flakes or pellets containing equal to or less than 10 wt% of water, or a step of making the aged paste into flakes or pellets containing equal to or less than 10 wt% of water and then crushing the resulting flakes or pellets into a powder having an average particle diameter of 100-1500 μm ; and

(4) a step of conducting a second aging of the powder, flakes, or pellets, wherein the second aging temperature is 25-45°C and the second aging time is equal to or longer than 30 minutes.

2. (Original) The process as defined in claim 1, which further comprises a step of mixing the powder, flakes, or pellets with an inorganic powder having an average particle diameter of 0.1-100 μm , in an amount of 1-40 wt% of the powder, flakes, or pellets.

3. (Original) The process as defined in claim 1 or 2 wherein the fatty acid alkylester has an iodine value equal to or lower than 1.

4. (Cancelled)

5. (Currently Amended) The process for producing a granular detergent ~~which comprises~~
comprising:

~~mixing or granulating the powder, flakes, or pellets obtained by the process defined in claim 1 together with a detergent component by any method selected from powder mixing, kneading crushing, and agitation granulation~~

(1) a step of preparing a paste containing α -sulfo fatty acid alkylester salt by a series of reactions of sulfonating a fatty acid alkylester with a sulfonating gas by contact with each other, esterifying the sulfonated product with a lower alcohol, neutralizing the esterified product, and bleaching the neutralized product, to give a paste containing α -sulfo fatty acid alkylester salt;

(2) a step of conducting a first aging of the thus obtained paste, wherein the first aging temperature is 60-90°C and the first aging time is 1-48 hours;

(3) a step of making the aged paste into flakes or pellets containing equal to or less than 10 wt% of water, or a step of making the aged paste into flakes or pellets containing equal to or less than 10 wt% of water and then crushing the resulting flakes or pellets into a powder having an average particle diameter of 100-1500 μm ;

(4) a step of conducting a second aging of the powder, flakes, or pellets, wherein the second aging temperature is 25-45°C and the second aging time is equal to or longer than 30 minutes; and

(5) a step of mixing or granulating the powder, flakes, or pellets obtained by the above step (4) with a detergent component by any method selected from powder mixing, kneading-crushing, and agitation granulation.

6. (Currently Amended) The A process for producing a granular detergent ~~which comprises comprising: mixing the powder, flakes, or pellets obtained by the process defined in claim 1 together with a detergent component and water, to give a slurry containing 20-50 wt% of water, and spray drying the slurry.~~

(1) a step of preparing a paste containing α -sulfo fatty acid alkylester salt by a series of reactions of sulfonating a fatty acid alkylester with a sulfonating gas by contact with each other, esterifying the sulfonated product with a lower alcohol, neutralizing the esterified product, and bleaching the neutralized product, to give a paste containing α -sulfo fatty acid alkylester salt;

(2) a step of conducting a first aging of the thus obtained paste, wherein the first aging temperature is 60-90°C and the first aging time is 1-48 hours;

(3) a step of making the aged paste into flakes or pellets containing equal to or less than 10 wt% of water, or a step of making the aged paste into flakes or pellets containing equal to or less than 10 wt% of water and then crushing the resulting flakes or pellets into a powder having an average particle diameter of 100-1500 μm ;

(4) a step of conducting a second aging of the powder, flakes, or pellets, wherein the second aging temperature is 25-45°C and the second aging time is equal to or longer than 30 minutes; and

(5) a step of mixing the powder, flakes, or pellets obtained by the above step (4) with a detergent component and water, to give a slurry containing 20-50 wt% of water, and spray-drying the slurry.

7. (Currently Amended) The process for producing a granular detergent ~~which comprises mixing or granulating the granular detergent obtained by the process defined in claim 5 or 6,~~ further comprising a step of mixing or granulating the granular detergent obtained by the process defined in claim 5 or 6 with a detergent component by any method selected from powder mixing, kneading-crushing, and agitation granulation.

8. (Cancelled)

9. (Currently Amended) ~~The A process for producing a solid detergent which comprises mixing and kneading the powder, flakes, or pellets obtained by the process defined in claim 1 together with a detergent component,~~ comprising:

(1) a step of preparing a paste containing α -sulfo fatty acid alkylester salt by a series of reactions of sulfonating a fatty acid alkylester with a sulfonating gas by contact with each other, esterifying the sulfonated product with a lower alcohol, neutralizing the esterified product, and bleaching the neutralized product, to give a paste containing α -sulfo fatty acid alkylester salt;

(2) a step of conducting a first aging of the thus obtained paste wherein the first aging temperature is 60-90°C and the first aging time is 1- 48 hours;

(3) a step of making the aged paste into flakes or pellets containing equal to or less than 10 wt% of water, or a step of making the aged paste into flakes or pellets containing equal to or less than 10 wt% of water and then crushing the resulting flakes or pellets into a powder having an average particle diameter of 100-1500 μm ;

(4) a step of conducting a second aging of the powder, flakes, or pellets, wherein the second aging temperature is 25-45°C and the second aging time is equal to or longer than 30 minutes; and

(5) a step of mixing and kneading the powder, flakes, or pellets obtained by the above step (4) with a detergent component, to obtain solid detergent.

10. (New) A process for producing a granular detergent comprising:

(1) a step of preparing a paste containing α -sulfo fatty acid alkylester salt by a series of reactions of sulfonating a fatty acid alkylester with a sulfonating gas by contact with each other, esterifying the sulfonated product with a lower alcohol, neutralizing the esterified product, and bleaching the neutralized product, to give a paste containing α -sulfo fatty acid alkylester salt;

(2) a step of conducting a first aging of the thus obtained paste, wherein the first aging temperature is 60-90°C and the first aging time is 1- 48 hours;

(3) a step of making the aged paste into flakes or pellets containing equal to or less than 10 wt% of water, or a step of making the aged paste into flakes or pellets containing equal to or less than 10 wt% of water and then crushing the resulting flakes or pellets into a powder having an average particle diameter of 100-1500 μm ;

(4) a step of conducting a second aging of the powder, flakes, or pellets, wherein the second aging temperature is 25-45°C and the second aging time is equal to or longer than 30 minutes; and

(5) a step of mixing the powder, flakes, or pellets obtained by the above step (4) with detergent particles by powder mixing.

11. (New) The process as defined in claim 1, wherein the second aging temperature is 30-45°C.

12.(New) The process as defined in claim 5, wherein the second aging temperature is 30-45°C.

13. (New) The process as defined in claim 6, wherein the second aging temperature is 30-45°C.

14. (New) The process as defined in claim 9, wherein the second aging temperature is 30-45°C.

15. (New) The process as defined in claim 10, wherein the second aging temperature is 30-45°C.

16. (New) The process as defined in claim 1, wherein the second aging temperature is 30-40°C.

17. (New) The process as defined in claim 5, wherein the second aging temperature is 30-40°C.

18. (New) The process as defined in claim 1, wherein the first aging time is 2-12 hours.

19. (New) The process as defined in claim 5, wherein the first aging time is 2-12 hours.